ATTACHMENT "B"

CLEAN VERSION OF SUBSTITUTE SPECIFICATION UNDER 37 C.F.R. § 1.125

RELATED APPLICATIONS

[0001] The present application claims the benefit of priority under 35 U.S.C. 119(e) of International Application no. PCT/JP/2005/012868, filed July 12, 2005, Japanese Application no. JP 2005000094080, filed March 29, 2005, Japanese Application no. JP 2005000094079, filed March 29, 2005 and Japanese Application no. JP 2004000208966, filed July 15, 2004. The disclosures of the above referenced applications are hereby fully incorporated by reference.

FIELD OF THE INVENTION

[0002] The present invention relates to a structure for forming and maintaining the three-dimensional shape of clothing.

BACKGROUND

[0003] Some lingerie has shape retentive wire so as to stabilize the shape of the lingerie or to adjust the lingerie to the form of one's body. The use of shape retentive wire is known not only in the field of lingerie but also in the fields of clothing and accessories.

[0004] For example, with regard to art described in the Japanese Patent Laid Open Gazette 2000-314023, the clothing described in said patent reference has a neck collar part which covers the ears and back of the head, wherein the neck collar part contains inserted shape retentive alloy wires or metal wires so as to keep the neck collar part standing.

[0005] With regard to art described in the Japanese Utility Model 3089123, wires of shape retentive alloy or metal wires are attached to the inside of a muffler as a shape retention member. Accordingly, the three-dimensional shape of the muffler can be changed freely and the desired shape can be kept, thereby improving the functionality of the overall design.

[0006] With regard to clothing formed from relatively soft material such as knit, it is difficult to form a three-dimensional shape of the clothing and keep such shape while maintaining the original qualities of the material. For example, with regard to clothing formed from relatively soft material such as knit, the neck collar part can be turned up or rolled down, but it is difficult to keep the turned up or rolled down shape because of the characteristics of the material, namely its softness and lack of rigidity.

[0007] Then, the present invention suggests construction of shape retentive clothing whose three-dimensional shape can be changed freely and kept in place securely even if the clothing is constructed from soft material such as knit.

SUMMARY OF THE INVENTION

[0008] The above-mentioned problems are solved by the following means according to the present invention.

[0009] In one embodiment of the present invention a member which is flexible and able to maintain its shape is attached to the clothing.

[0010] In another embodiment of the present invention a member which is flexible and able to maintain its shape is attached to a body, a sleeve, a cuff, a neck or a pocket of the

clothing.

[0011] In another embodiment of the present invention a resin wire and/or a ceramic wire are used as a member which is flexible and able to maintain its shape.

[0012] In another embodiment of the present invention an end of the resin wire or the ceramic wire comprising the flexible and shape retentive member is turned up and covered by a cylindrical member.

BRIEF DESCRIPTION OF THE DRAWINGS

[0013] Figure 1 is a drawing of a shirt having a neck collar.

[0014] Figure 2 is a drawing demonstrating the arrangement of wires attached to the shirt having a neck collar.

[0015] Figure 3 is a drawing of a T-shirt.

[0016] Figure 4 is a drawing demonstrating the arrangement of wires attached to the T-shirt.

[0017] Figure 5 is a drawing demonstrating the construction of a border line.

[0018] Figure 6 is a drawing of a shape retentive wire, wherein the end of said wire is turned up and covered by a cylindrical member.

[0019] Figure 7 is a drawing demonstrating one embodiment of the present invention, wherein a shape retentive wire is attached to the clothing.

[0020] Figure 8 is a side view drawing demonstrating one embodiment of the present invention, wherein a shape retentive wire is attached to the clothing.

[0021] Figure 9a is a drawing demonstrating a neck collar in the down position where the shape retentive wire is attached to said neck collar.

[0022] Figure 9b is a drawing demonstrating a neck collar in the upward position where the shape retentive wire is attached to said neck collar.

[0023] Figure 10a is a drawing demonstrating a closed pocket to which the shape retentive wire is attached.

[0024] Figure 10b is a drawing demonstrating an open pocket to which the shape retentive wire is attached.

[0025] Figure 11a is a drawing demonstrating a sleeve in the unrolled position to which the shape retentive wire is attached.

[0026] Figure 11b is a drawing demonstrating a sleeve in the rolled up position to which the shape retentive wire is attached.

[0027] Figure 12a is a drawing demonstrating trousers with the trouser legs in the unrolled position to which the shape retentive wire is attached.

[0028] Figure 12b is a drawing demonstrating trousers with the trouser legs rolled up to which the shape retentive wire is attached.

DETAILED DESCRIPTION OF THE INVENTION

[0029] Numbering reference list:

10 a shirt

11 a body

12 a sleeve

13 a neck

14 a neck hole

15 a pocket

20 a wire

21 a tube

[0030] The present invention constructed as above brings the following effects. The clothing can be formed three-dimensionally and kept in the desired shape even if the clothing is constructed from soft cloth which does not maintain its shape easily. When the clothing gets out of shape once, the clothing can be formed back into desired shape easily.

[0031] For example, in one embodiment of the present invention the sleeve may be rolled up and the rolled up shape of the sleeve can be maintained even if the clothing is constructed from soft cloth which does not maintain its shape easily.

[0032] In another embodiment of the present invention the shape retentive wire is made out of ceramic wire, wherein the ceramic wire does not rust, is not spoiled by washing, and is bendable. Furthermore, the ceramic wire hardly becomes brittle even if the wires are bent repetitively. Accordingly, the ceramic wire is more advantageous than metal wire.

[0033] In another embodiment of the present invention the end of the shape retentive wire attached to the clothing is prevented from piercing cloth and projecting outside the clothing by means of covering the ends of the wire by a cylindrical member.

[0034] A shape retentive dress according to the present invention can be made to keep its shape without spoiling the feel of cloth constituting the dress even though the cloth is soft cloth which has difficulty keeping its three-dimensional shape, such as knit.

[0035] In Fig. 1, a knit shirt 10 is shown as an example of the shape retentive dress according to the present invention. The shirt 10 is necked. Sleeves 12 are sutured to a body 11 of the shirt 10. A neck 13, a pocket 15 and a flap 15a are sutured to the body 11. In addition, as shown in Fig. 3, a knit T-shirt 40 having no neck also can be made shape retentive.

[0036] Shape retentive dress of the present invention is not limited to shirts, the present invention also can be applied to a broad variety of clothing, including but not limited to trousers or jackets. The construction of the shape retentive dress according to the present invention can be applied to an accessory, such as a muffler, a scarf or shoes, so as to make a shape retentive accessory.

[0037] A dress material constituting the dress is not limited to knit, and another material may be used.

[0038] As shown in Figs. 1 and 3, the shirt 10 or 40 is constructed by striped knit.

[0039] Wires 20, which are transformable and able to maintain their shapes, are attached to suitable positions of the shirt 10 so as to obtain shape retention, that is, to change the three-dimensional shape of the dress freely and to keep the desired shape in place.

[0040] As shown in Figs. 2 and 4 for example, with regard to the necked shirt 10, the wires 20 are attached to the neck 13, a neck hole (an opening of the neck) 14, the lower portions

of the sleeves 12, the lower portion of the body 11, the edge of the pocket 15 and the edge of the flap 15a. With regard to the T-shirt 40, the wires 20 are attached to the lower portions of the sleeves 12 and the lower portion of the body 11.

[0041] A metal wire, a resin wire, a ceramic wire or the like can be used as each of the wires 20. In this embodiment, ceramic wires are used. The ceramic wires don't rust, are not spoiled by washing, and are bendable. Furthermore, the brittleness of the ceramic wires remains minimal even if the wires are bent continuously. Accordingly, the ceramic wires are more advantageous than metal wires.

[0042] As shown in Fig. 6, both ends 20a of each of the wires 20 are turned up. The turned parts are inserted into and fixed to resin tubes 21 respectively by hot welding. Accordingly, the ends of wires 20 attached to the cloths constituting the dress are prevented from piercing the cloths and projecting outside the cloth.

[0043] The wires 20 are attached to the reverse side of the dress so as not to be exposed.

[0044] For example, as shown in Fig. 7, each of the wires 20 is inserted into a pipe formed by suturing a separate cloth 19 to the reverse side of the main cloths 17 so as to attach the wires 20 to the dress.

[0045] With regard to this embodiment, as shown in Fig. 8, the separate cloth 19 is attached to the reverse side of each of the sub cloths 16 so as to form a pipe by the separate cloth 19 and the sub cloth 16, and then the wire 20 is inserted into the pipe, thereby attaching the wires 20 to the dress.

[0046] In addition, the wires 20 are not fixed to or weaved into the dress. The wires are attached to the dress movably within a small allowable range. That is because the dress is formed by elastic cloth, such as knit. Accordingly, unnatural contraction and creases are prevented from being generated by the expansion and contraction of the knit at the part to which the wires 20 are attached.

However, the attachment of the wires 20 is not limited thereto. The wires may be attached to the dress movably within a small allowable range by fastening some parts of the wire 20. Alternatively, it may be constructed that the edge of the main cloth 17 is turned up and the wire 20 is inserted into the turned part.

[0047] In the vicinity of the neck 13 of the shirt 10, as shown in Fig. 9 (a), the wires 20 are attached to the peripheral edges of the neck 13 and the neck hole 14. Accordingly, as shown in Fig. 9 (b), the neck 13 is kept turned up. The shirt collar may be formed three-dimensionally and kept in the desired shape. For example, a part of the neck 13 may be bent or the neck hole 14 may be waved.

[0048] At the pocket 15 of the shirt 10, as shown in Fig. 10 (a), the wires 20 are attached to the peripheral edges of the opening of the pocket 15 and the flap 15a. Accordingly, as shown in Fig. 10 (b), the pocket 15 may be embossed on the body 11 and formed three-dimensionally. The flap 15a may be formed three-dimensionally to be turned up. The shape of the pocket 15 or the flap 15a can be maintained.

[0049] At each of the sleeves 12 of the shirt 10, as shown in Fig. 11 (a), the plural wires

20 are attached to the lower portion of the sleeve 12 passing over the longer direction of the sleeve. These wires 20 are circular along the peripheral direction of the sleeve. Plural wires may be attached along the peripheral direction of the sleeve. However, it is desirable to attach a circular wire along the shape of the sleeve. Accordingly, as shown in Fig. 11 (b), the sleeve 12 may be formed three-dimensionally to be rolled up. The shape of the sleeve 12 can be maintained.

[0050] In addition, with regard to a pair of trousers 25 as a shape retentive dress, as shown in Fig. 12 (a), plural circular wires 20 are attached to the cuffs of the trousers 25. Accordingly, as shown in Fig. 12 (b), the trousers 25 constructed by soft cloth such as knit may be rolled up. The desired shape of the trousers 25 can be maintained.

[0051] As was previously mentioned, by attaching the wires 20 to a dress, the dress can be formed to assume a three-dimensional shape and kept in the shape even if the dress is constructed from soft cloth which otherwise has difficulty retaining its shape. Furthermore, in the present invention there is no need to perform any treatment, such as starching, on the surface of the cloth, whereby the feeling of the cloth is not spoiled.

[0052] Moreover, the shape retainability of the wires 20 is not changed with the passage of time so that the three-dimensional shape of the dress is maintained indefinitely. If the dress gets out of shape once, the wires 20 can be formed again easily so as to form a desired shape without requiring any special apparatus, tool or chemical.